 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 1 of 8
	PROCESSED BY J. West	CHECKED BY	

PERMIT TO OPERATE

SUMMARY: Modification (without a PC) of Heater H-902 (D129) to convert the fuel from refinery gas to natural gas and to switch from heating asphalt to heating hot oil, as well as to add a hot oil surge drum.

COMPANY INFORMATION

Company Name: Paramount Petroleum Corporation, Facility ID No. 800183
 Mailing Address: 14700 Downey Ave, Paramount, CA 90723
 Equipment Location: 14700 Downey Ave, Paramount, CA 90723
 Contact Person: Kathryn Gleeson, (562) 748-4613

EQUIPMENT DESCRIPTION


Table 1 shows the proposed Section D permit description for Process 4, System 12. Additions to the description are noted in underlines and deletions are noted in ~~strikeouts~~.

Table 1. Permit Equipment Description

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 4: ASPHALT PRODUCTION					
System 12: HEATERS					
HEATER, H-902, <u>REFINERY GAS</u> <u>NATURAL GAS, ASPHALT HOT OIL</u> HEATER, WITH LOW NOX BURNER, 7.2 MMBTU/HR WITH A/N: <u>321028 447466</u> BURNER, JOHN ZINK, MODEL PSFR-16M, WITH LOW NOX BURNER	D129		NOX: LARGE SOURCE**, <u>SOX:</u> <u>MAJOR SOURCE**</u>	CO: 400 PPMV (5) [RULE 1146, 11-17-2000; CO: 2000 PPMV (5A) [RULE 407, 4-2-1982]; NOX: 60 PPMV (3) [RULE 2012, 5-6- 2005]; PM: (9) [RULE 404, 2-7-1986]; PM: 0.1 GRAINS/SCF (5) [RULE 409, 8-7-1981]	D332.1
<u>DRUM, SURGE, HOT OIL, D-932,</u> <u>DIAMETER: 5 FT; HEIGHT: 7 FT 5 IN</u> <u>A/N: 447466</u>	<u>Dddd</u>				<u>E336.x</u>
Process 15: AIR POLLUTION CONTROL					
System 1: FLARE VAPOR RECOVERY SYSTEM					S13.2, S13.3, S56.1, <u>S58.1</u>
Process 15: AIR POLLUTION CONTROL					
System 2: REFINERY FLARE SYSTEM					S13.2, <u>S58.2</u>

See changes to existing Conditions S58.1 and S58.2 in the Conditions Section.

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 2 of 8
	PROCESSED BY J. West	CHECKED BY	

COMPLIANCE RECORD REVIEW

A query of the AQMD Compliance Database for the past two years (4/25/11 to 4/25/13) identified 9 Notice of Violations (NOVs) and 5 Notices to Comply issued to Paramount Petroleum (Facility ID 800183). None of the NOVs were related to the subject equipment. The compliance database indicates that the facility is currently in compliance with applicable rules and regulations.

FEE EVALUATION

The BCAT for Heater H-902 (D129) is 19603 [Heater/Furnace (5-20 MMBtu/hr) Proc Gas], Schedule C. The processing fee for Schedule C is \$2437.95 plus a 50% penalty for making a modification without a Permit to Construct, a total of \$3656.93. The facility paid \$3449.93 when the application was submitted, so an additional \$207.00 will be billed to the facility when the permit is issued.

BACKGROUND/HISTORY

Heater H-902 (D129) is used to heat hot oil that is circulated to nearby asphalt storage tanks equipped with heating coils. This heater previously was fired with refinery fuel gas and was used to heat asphalt for circulation to heating coils, but is now fired with natural gas and heats hot oil. These modifications were made without a Permit to Construct. As part of this permit action, the permit description is being updated to reflect its current configuration.


The facility has also requested that the hot oil surge drum be listed in the permit as part of the heater permit unit. The hot oil surge drum is a holding tank for the oil to be heated and circulated to the storage tanks with hot oil coils. The surge drum ensures that the circulating pumps to the heater maintain constant suction. The hot oil surge drum (Dddd) vents to the vapor recovery system in an emergency, but is otherwise a closed system.

The hot oil surge drum (Dddd) has a pressure relief valve that is connected to the flare vapor recovery system, as required in Condition E336.x. In association with this identification of a device that vents to the vapor recovery system/flare, vapor recovery and flare venting conditions S58.1 and S58.2 are being updated to show that they may receive vent gases from device Dddd of Process 4, System 12. This change to the flare vapor recovery and flare venting conditions is being included under open A/N's 529077 and 526353.

The permitting history for this permit unit is provided below in Table 2.

Table 2. Permitting history of Heater H-902 (D129)

A/N {permit #}	Facility ID	Permit Issued	Type	Status	Description
447466	800183	pending	50	21	Modification to change heater description from refinery gas-fired asphalt heater to natural gas-fired hot oil heater and add a hot oil surge drum (modification made without a PC)
321028 {F4532}	43010	12/12/96	60	31	Modification to change limit from 38.475 ppmv to 60 ppmv NOx
225312	43010	12/31/90	30	31	Modification to replace burner and increase heater duty

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 3 of 8
	PROCESSED BY J. West	CHECKED BY	

{D34925}					
104277 {M32863}	43010	9/16/83	40	31	Change of Operator from Douglas Oil to Pacific Oasis/Paramount Petroleum
A47960 {P29463}	10449		-	31	Original permit for heater H-902 originally installed in 1968

EMISSIONS

Converting the heater from refinery fuel gas to natural gas will reduce the emissions of sulfur, and will result in the reclassification of this RECLAIM device, since natural gas-fired devices are not classified as Major RECLAIM SO_x sources. This heater will no longer be a RECLAIM Major Source for SO_x, but will continue to be classified as a RECLAIM Large source for NO_x.

Emissions were not calculated in the previous permit, so baseline emissions from natural gas were calculated for this 7.5 MMBtu/hr heater using Annual Emissions Reporting (AER) default emission factors for natural gas-fired external combustion equipment, as shown in Table 3. As part of this permit action, baseline emissions will be updated for this permit unit. Converting this heater from refinery gas to natural gas fuel will not cause or allow an increase in emissions.

Table 3. Emissions from Heater H-902 (D129)


Pollutant	Firing rate (MMBtu/hr)	HHV of fuel (MMBtu/ MMscf)	Emission Factor (lb/MMscf)	EMISSIONS		
				lb/hr	lb/day	lb/yr
ROG	7.5	1020	7	0.051	1.24	450.9
NO _x	7.5	1020	130	0.956	22.94	8373.5
SO _x	7.5	1020	0.6	0.004	0.11	38.6
CO	7.5	1020	35	0.257	6.18	2254.4
PM	7.5	1020	7.5	0.055	1.32	483.1

The hot oil surge drum is a closed system with no emissions to the atmosphere, and vents to the vapor recovery/flare system only in an emergency. No emissions were estimated for this device.

RULES EVALUATION

PART 1: SCAQMD REGULATIONS

- Rule 212** **Standards for Approving and Issuing Public Notice (Amended 11/14/97)**
 Rule 212 requires public notice for any new or modified permit unit, RECLAIM source or Title V equipment that increases emissions of toxic air contaminants and increases health risk as specified in 212(c)(1) - (c)(3). This modification does not include any increases in emissions or health risk; thus, public notice is not required.
- Rule 401** **Visible Emissions (Amended 11/09/01)**
 Operation of this permit unit is not expected to result in visible emissions. The facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 4 of 8
	PROCESSED BY J. West	CHECKED BY	

Rule 402 Nuisance (Adopted 05/07/76)

Operation of this permit unit is not expected to result in a public nuisance. The facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

Rule 404 Particulate Matter - Concentration (Amended 02/07/86)

Rule 404 limits the particulate concentration that can be discharged from these permit units. This emission limit is referenced in the Emissions and Requirements column of the facility permit. For 7.2 MMBtu/hr-capacity Heater H-902 (D129) with an exhaust flow rate of 1045 dscfm, the corresponding allowable PM limit is 0.184 grains/cubic foot. The calculated particulate matter concentration for this device is .005741 grains/scf, using a PM emission factor of 7.5 lb/MMscf and assuming natural gas properties. This concentration is significantly lower than the limit for this device; thus, the facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

Rule 407 Liquid and Gaseous Air Contaminants (Amended 04/02/82)

This rule imposes a 2000 ppmv limit on CO emissions. This emission limit is referenced in the Emissions and Requirements column of the facility permit. Compliance with this rule is monitored by Condition D332.1. The facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

Rule 409 Combustion Contaminants (Amended 08/07/81)

This rule limits combustion emissions to less than 0.1 grain per ft³ of exhaust gas. This emission limit is referenced in the Emissions and Requirements column of the facility permit. As described in the Rule 404 section of this evaluation, the calculated particulate matter concentration for Heater H-902 (D129) is 0.0057 grains/scf. Thus, the facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.


Rule 1109 Emissions of Oxides of Nitrogen from Boilers and Process Heaters in Petroleum Refineries (Amended 08/05/88)

According to Table 1 of Rule 2001(j), RECLAIM facilities are exempt from the NOx emission requirements of Rule 1109. There are no other applicable requirements in this rule.

Rule 1146 Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters (Amended 11/17/00)

For equipment located at petroleum refineries, Rule 1146 applies to heaters with rated heat input capacities greater than 5MMBtu/hr and less than 40MMBtu/hr. Heater H-902 is rated at 7.5 MMBtu/hr, and is thus subject to Rule 1146 requirements. Table 1 of Rule 2001(j) states that RECLAIM facilities are exempt from the NOx emission requirements of Rule 1146. Thus, Heater H-902 (D129) is not subject to Rule 1146 NOx requirements.

Rule 1146 limits CO emissions to less than 400 ppm or 0.3 lb/MMBtu for natural gas-fired units. D129 is tagged with a 400 ppm CO limit in the "Emissions and Requirements" column of the Equipment Description table. Condition D332.1 requires periodic source testing to demonstrate compliance with this CO emission limit.

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 5 of 8
	PROCESSED BY J. West	CHECKED BY	

The facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

Reg XIII New Source Review (Amended 12/06/02)

Rule 1303 Requirements (Amended 12/6/02) New Source Review requirements apply to new, modified or relocated sources. According to Table 1 of Rule 2001(j), RECLAIM facilities are exempt from the requirements of Regulation XIII with regard to NO_x and SO_x emissions. The facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

Reg XIV Toxics and Other Non-Criteria Pollutants

Rule 1401: New Source Review of Toxic Air Contaminants (Amended 03/04/05)

Rule 1401 applies to new, modified or relocated permit units that emit Toxic Air Contaminants (TAC). This modification does not involve any increase in emissions; thus, no additional requirements apply. The facility is currently in compliance with this rule and is expected to continue to operate in compliance with this rule.

Reg XX Regional Clean Air Incentives Market (RECLAIM)

Rule 2004: Requirements (Amended 04/06/07)

Rule 2004 includes provisions relating to permits, allocations, reporting, variances, and breakdowns. These include the requirement to certify facility-wide emissions on a quarterly basis and not to exceed the facility's annual emissions allocation. In addition, breakdowns are required to be reported to the District within one hour of the breakdown and a follow-up breakdown report is required within 7 days after the breakdown has been corrected. Heater H-902 (D129) is currently in compliance with this rule and is expected to continue to comply with the requirements of this rule.

Rule 2005: New Source Review for RECLAIM (Amended 05/06/05)


Rule 2005 applies to NO_x and/or SO_x RECLAIM facilities and requires BACT and modeling for modifications that result in an emissions increase [2005(c)(1)]. An emission increase is defined as an increase in the maximum hourly potential to emit [2005(d)]. Converting this heater from refinery gas-fired to natural gas-fired will not result in an increase in emissions; thus, no requirements apply.

Rule 2011: Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Sulfur (SO_x) Emissions (Amended 05/06/05)

Due to its previous use of refinery gas fuel, Heater H-902 (D129) is currently classified as a RECLAIM Major SO_x source [2011(c)(1)(D)], subject to the monitoring, reporting and recordkeeping requirements of Rule 2011(c)(2). The objective of this permit action is to change Heater H-902 (D129) from refinery gas-fired to natural gas-fired. Heaters fired with natural gas are not subject to the requirements of Rule 2011. As part of this permit action, Heater H-902 (D129) is being reclassified and will no longer be considered a RECLAIM Major SO_x source. No requirements of this rule apply.

Rule 2012: Requirements for Monitoring, Reporting, and Recordkeeping for Oxides of Nitrogen (NO_x) Emissions (Amended 05/06/05)

Heater H-902 (D129) is classified as a RECLAIM Large NO_x source [2012(d)(1)], and is thus subject to the monitoring, reporting and recordkeeping requirements of Rule 2012(d)(2). Rule 2012 requires that a totalizing fuel meter be installed and maintained to determine monthly fuel usage. This heater complies with RECLAIM by reporting

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 6 of 8
	PROCESSED BY J. West	CHECKED BY	

monthly NOx emissions based on monthly fuel usage. Heater H-902 (D129) is currently in compliance and is expected to continue to comply with all applicable RECLAIM requirements.

Reg XXX

Title V Permits

Rule 3002 Requirements (Amended 11/14/97) This application is classified as a minor permit revision as defined in 3000(b)(15). Minor permit revisions are exempt from public participation per Rule 3006(b) but are required to be submitted to the EPA for review per 3003(j)(1)(A).

PART II: STATE REGULATIONS

CEQA

California Environmental Quality Act (Amended 01/01/05)

This project does not trigger CEQA and is exempt from further CEQA action since it does not have the potential to generate significant adverse environmental impacts. In Form 400-CEQA, the facility did not identify any impacts that may trigger CEQA. Thus, the application is exempt from further CEQA action.

PART III: FEDERAL REGULATIONS

40CFR60

Subpart J Standards of Performance for Petroleum Refineries (Amended 06/24/2008)

The requirements of Subpart J apply to fuel gas combustion devices at petroleum refineries. Heater D713 is fired only with natural gas that is not generated at the refinery or combined with any other fuel gases [60.101(d)], thus, the heater is not a fuel gas combustion device, and the requirements of Subpart J do not apply.


RECOMMENDATIONS

Based on the above evaluation, it is recommended that the permit to operate be modified as described in this document. It is recommended that a Permit to Operate be issued with the following conditions. Note that Conditions S58.1 and S58.2 are being modified for the Flare Vapor Recovery System and Flare system in association with open PC applications A/N's 529077 and 526353.

CONDITIONS

S58.1 The Flare Vapor Recovery System shall only be used to receive and handle vent gases from the following Process(es) and System(s):

- Crude Unit (Process: 1, System: 1, 2, 4, 5, 6, & 7)
- Hydrotreating Unit (Process: 2, System: 1, 3, & 4)
- Catalytic Reforming Unit (Process: 3, System: 1)
- Asphalt Production (Process 4, System 12 Device Dddd only)**
- Treating, Stripping (Process: 6, System: 1, 2, 4, 5, 6 & 7)
- Sulfur Recovery Unit (Process: 7, System: 2)
- Storage Tanks (Process: 10, System: 3)
- Miscellaneous (Process: 13, System: 6)

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 7 of 8
	PROCESSED BY J. West	CHECKED BY	

Isomerization (Penex Plus) Process (Process: 16, System: 1, 2 & 3)

The flare gas recovery system shall be operated in full use when any of the above Process(es) and System(s) is in operation. Full use means one of two compressor trains (Process 15, System 1) is online at any given time.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

[Systems subject to this condition : Process 15, System 1]

S58.2 The Refinery Flare System shall only be used to receive and handle vent gases from the following Process(es) and System(s):

Crude Unit (Process: 1, System: 1, 2, 4, 5, 6, & 7)
 Hydrotreating Unit (Process: 2, System: 1, 3, & 4)
 Catalytic Reforming Unit (Process: 3, System: 1)
Asphalt Production (Process: 4, System: 12 Device Dddd only)
 Treating, Stripping (Process: 6, System: 1, 2, 4, 5, 6 & 7)
 Sulfur Recovery Unit (Process: 7, System: 2)
 Storage Tanks (Process: 10, System: 3)
 Miscellaneous (Process: 13, System: 6)
 Flare Vapor Recovery System (Process: 15, System 1)
 Isomerization (Penex Plus) Process (Process: 16, System: 1, 2 & 3)

The flare gas recovery system shall be operated in full use when any of the above Process(es) and System(s) is in operation. Full use means one of two compressor trains (Process 15, System 1) is online at any given time.

[RULE 1118, 11-4-2005]

[Systems subject to this condition : Process 15, System 2]

Note that S58.1 and S58.2 are being updated as part of open PC applications A/N's 529077 and 526353.


D332.1 The operator shall determine compliance with the CO emission limit(s) by conducting a test at least once every five years annually using a portable analyzer and AQMD-approved test method or, if not available, a non-AQMD approved test method. . The test shall be conducted when the equipment is operating under normal conditions to demonstrate compliance with the CO concentration limit(s). The operator shall comply with all general testing, reporting, and recordkeeping requirements in Sections E and K of this permit.

[RULE 1146, 11-17-2000; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 407, 4-2-1982]

[Devices subject to this condition: D128, D129]

E336.x The operator shall vent the vent gases from this equipment as follows:

All emergency vent gases shall be directed to the Flare Vapor Recovery System (Process 15,

 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING & COMPLIANCE DIVISION APPLICATION PROCESSING AND CALCULATIONS	APPL. NO. 447466	DATE 4/25/13	PAGE 8 of 8
	PROCESSED BY J. West	CHECKED BY	

System 1). If the flare vapor recovery system is operating at its capacity and is unable to receive additional vent gases, the emergency vent gases shall be directed to the Refinery Flare System (Process 15, System 2).

This equipment shall not be operated unless the flare vapor recovery system and the refinery flare system are in full use and have a valid permit to receive vent gases from this equipment.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition: Dddd]